

REMARKS

Claims 1-20 are currently being cancelled in lieu of new claims 20-40 to fix unintentional typographical errors in the claims previously submitted, obviate the Examiner's objections, and conform the claims to U.S. practice.

In part, the current amendments fix an unintentional typographical error in previously pending claim 11, now pending claim 31. Previously pending claim 11 recited R^{6A} and R^{7A}, in part, comprised a C₇-C₄₀-arylalkyl or C₇-C₄₀-alkylaryl comprising from 1 to 16 carbon atoms in the alkyl radical and from 6 to 21 carbon atoms in the aryl radical. However, current pending claim 31 recites R^{6A} and R^{7A}, in part, comprises a C₇-C₄₀-arylalkyl or C₇-C₄₀-alkylaryl comprising from 1 to 19 carbon atoms in the alkyl radical and from 6 to 21 carbon atoms in the aryl radical.

The limitation in previously pending claim 11 was an apparent typo given the arylalkyl and alkylaryl comprised at least 7 carbon atoms as a lower limit, and a maximum of 40 carbon atoms as an upper limit. Thus, if there are 6 to 21 carbon atoms in the aryl radical, there necessarily must be 1 to 19 carbon atoms in the alkyl radical, not 1 to 16.

Applicant asserts no subject matter has been relinquished by these amendments. Additionally, these amendments do not introduce new matter within the meaning of 35 U.S.C. §132.

1. Objection to Claims 1 and 10-13

The Office Action states,

Claims 1 and 10-13 are objected to because of the following informalities: in claim 1, the capital letters denoting each separate ingredient in the catalyst should all be in parentheses for the sake of clarity and consistency; in l. 5 make "Wherein" lower case; in l. 9 change "or" to a comma; in l. 13 change the first "or" to a comma; in l. 18 change the period to a comma or semicolon. In claim 10, change "type" to --group containing--. In claim 11, p. 7 of the preliminary amendment, l. 2, change "en" to --an--; in l. 17 insert a comma after "halogen"; in l. 18 change "be joined" to --are joined--; in l. 21 change "can each be" to --are each--; on p. 8, l. 4, insert --or-- between the second and third chemical groups, on l. 9 change "can each be" to --are each--; on p. 9, l. 10-11, the "cycloalkyl or" portion looks like it belongs in l. 10 after the "alkyl" portion. In claim 12, l. 3, delete the first "are identical, in l. 4 insert --two-- after the second "or", and in l. 5 delete the two commas and insert a comma after "group". In claim 13, l. 2, change "are" to --is--; on p. 12, l. 1, change "the" to --their--, and end the following line with a semicolon instead of a period; still on p. 12, end l. 15 with a semicolon. Appropriate correction is required.

RESPONSE

Claims 1 and 10-13 have been cancelled rendering the above objections moot. Notwithstanding, Applicant has submitted new claims 20-40, which Applicant believes obviates the Examiner objections listed on page 2 of the pending Office Action.

However, Applicant kindly traverses two of the Examiner's objections; one to previously pending claim 10 and one to previously pending claim 13, which now correspond to currently pending claims 30 and 33, respectively.

In particular, the Examiner objected to the term "type" in previously pending claim 10. "A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification." See MPEP § 2111.01 III and § 2173.01. Applicant believes the phrase "cyclopentadienyl-type ligand" currently recited in claim 30 is properly defined in the specification and claim, and that one skilled in the art would appreciate the metes and bounds thereof. Accordingly, Applicant kindly requests the Examiner to withdrawal this objection.

Additionally, the Examiner objected to the term "the" in previously pending claim 13. Applicant believes the phrase "or two R^{1A} to R^{5A} radicals and/or two R^{9A} to R^{13A} radicals together with the cyclopentadienyl ring form an indenyl or substituted indenyl system;" in currently pending claim 33 is properly defined in the specification and claim, and that one skilled in the art would appreciate the metes and bounds thereof. "If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 77 USPQ2d 1625 (Fed. Cir. 2006). See MPEP § 2173.05(e).

Accordingly, Applicant kindly requests the Examiner to withdrawal the objections.

2. Rejection of Claims 1-20 Under 35 U.S.C. § 112, 2nd Paragraph

The Office Action states claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Office Action states,

In claim 1, l. 3, (B) is recited as being an organometallic compound. This requires that at least one of the R¹⁻³ groups be a hydrocarbyl bonded to M¹ via a carbon atom, yet as currently recited such a bond is not required. Organometallic also requires that the M¹ atom be a metal, yet in many dependent claims M¹ may be boron which has no metallic properties whatsoever, hence the use of the term "organometallic" appears to contradict the specifics of the limitation on (B), although the definition of M¹ explicitly requires it be *inter alia* a group 13 metal.

In claims 3 and 15-18, boron is recited as being part of the metal compound of formula V from claim 1, yet as recited above boron has no metallic properties and thus is not in fact a metal.

In claim 6, p. 5 of the amendment, l. 6, change the first "or" to a comma, insert a comma before the second "or" and delete "R⁴ is". Claim 9 should be likewise amended.

In claim 11, p. 7 of the amendment, l. 6, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). In l. 12 of that page correct M to the proper symbol for this instance of a metal atom. On p. 8 of the amendment, l. 4-5, correct the superscripts on the R variables; in the definitions of R^{15A}, correct the superscripts on the various M variables; on p. 9 of the amendment, l. 6, the last three groups are missing a second valence as the previous page l. 11 requires.

In claim 13, p. 11, 6th line from the bottom, add the proper superscript to X in the text; on p. 12, do the same to the second line from the end.

In claims 19 and 20, second line of each, correct "Lewis acid" to --Lewis base--.

RESPONSE

Claims 1-20 have been cancelled rendering the above rejection moot. Notwithstanding, Applicant has submitted new claims 20-40, which Applicant believes obviates the Examiner rejections listed on pages 2, line 18 - page 3, line 16 of the pending Office Action.

However, Applicant kindly traverses several of the Examiner's rejections to previously pending claim 1, to previously pending claims 3 and 15-18, and to previously pending claim 11, which now correspond to currently pending claims 21, 23, 35-38, and 21, respectively.

In particular, the Office Action states "In claim 1, l. 3, (B) is recited as being an organometallic compound. This requires that at least one of the R¹⁻³ groups be a hydrocarbyl bonded to M¹ via a carbon atom, yet as currently recited such a bond is not required." Applicant traverses this rejection, and believes component (B) in currently pending claim 21 is properly defined in the specification and claim, and that one skilled in the art would appreciate the metes and bounds thereof. "If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 77 USPQ2d 1625 (Fed. Cir. 2006). See MPEP § 2173.05(e).

Additionally, "A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own

lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification." See MPEP § 2111.01 III and § 2173.01. Applicant believes component (B) currently recited in claim 21 is properly defined in the specification and claim, and that one skilled in the art would appreciate the metes and bounds thereof.

Accordingly, Applicant kindly requests the Examiner to withdrawal this rejection.

Additionally, the Office Action states,

Organometallic also requires that the M^1 atom be a metal, yet in many dependent claims M^1 may be boron which has no metallic properties whatsoever, hence the use of the term "organometallic" appears to contradict the specifics of the limitation on (B), although the definition of M^1 explicitly requires it be *inter alia* a group 13 metal.

In claims 3 and 15-18, boron is recited as being part of the metal compound of formula V from claim 1, yet as recited above boron has no metallic properties and thus is not in fact a metal."

Applicant traverses this rejection, and believes component (B) in currently pending claims 21, 23, and 35-38 is properly defined in the specification and claims, and that one skilled in the art would appreciate the metes and bounds thereof. "If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 77 USPQ2d 1625 (Fed. Cir. 2006). See MPEP § 2173.05(e).

"A fundamental principle contained in 35 U.S.C. 112, second

paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification." See MPEP § 2111.01 III and § 2173.01.

Accordingly, Applicant kindly requests the Examiner to withdrawal these rejections.

Moreover, the Office Action states, "on p. 9 of the amendment, l. 6, the last three groups are missing a second valence as the previous page l. 11 requires." Applicant kindly traverses this rejection since the merit of the rejection is not understood by the Applicant. Notwithstanding, Applicant believes new pending claim 32 is in fact definite, and complies with 35 U.S.C. 112.

Accordingly, Applicant kindly requests the Examiner to withdrawal this rejection.

2. Rejection of Claims 1-20 Under 35 U.S.C. §103(a)

The Office Action states that claims 1-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,482,902 (herein referred to as "Bohnen, et al. I") in view of U.S. Patent 6,417,302 (herein referred to as "Bohnen, et al. II"). In particular, the Office Action states,

Bohnen I discloses the invention substantially as claimed when one considers that the combination of the active hydrogen-containing group (C) of the present claims plus the organometallic compound (B) of the present claims correspond to the ingredient d) of col. 2, l. 35-54 and

examples 1-4 of the prior art (col. 2, l. 14 to col. 3, l. 16; col. 3, l. 41 to col. 5, l. 31; examples 1-4, 6, 8, 11, 13, 17-25).

Bohnen I lacks disclosure of combining the all the reagents simultaneously without isolation of intermediates, i.e., a "one-pot" synthesis.

However, Bohnen II teaches that combining reagents to make a one-pot synthesis of similar catalysts is conventional in the art (examples 1 and 7; col. 1, l. 47 to col. 6, l. 39).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Bohnen II to the disclosure of Bohnen I with a reasonable expectation of obtaining a highly-useful method of making a supported catalyst with the expected benefit of fewer steps and thus lower cost of production.

RESPONSE

Claims 1-20 have been cancelled rendering the above rejection moot.

Notwithstanding, the current application and the subject matter contained in U.S. Patent 6,482,902 (referred to herein as Bohnen, et al. I) is commonly owned, and Applicant was subject to an obligation of assignment to the owner of Bohnen, et al. I at the time the claimed inventive subject matter was made. Applicant has included herein as Attachment B (1) a copy of the Recordation of Assignment for the currently pending application, and (2) a copy of the assignee of record for Bohnen, et al. I from the U.S. Assignment database. Accordingly, Applicant respectfully believes Bohnen, et al. I is not prior art under 35 U.S.C. 103(c).

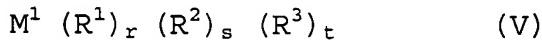
Additionally, the U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was

determined under § 103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

As outlined in the Office Action on page 4, Bohnen, et al. II fails to teach, disclose, or suggest, "A process for preparing a catalyst solid for olefin polymerization by contacting, without any isolation of an intermediate,

- (A) at least one organic transition metal compound;
- (B) at least one organometallic compound of formula (V)



where

M^1 is an alkali metal, an alkaline earth metal, or a metal of group 13 of the Periodic Table;

R^1 is hydrogen, C_1-C_{10} -alkyl, C_6-C_{15} -aryl, halo- C_1-C_{10} -alkyl, halo- C_6-C_{15} -aryl, C_7-C_{40} -arylalkyl, C_7-C_{40} -alkylaryl, C_1-C_{10} -alkoxy, halo- C_7-C_{40} -alkylaryl,

halo-C₇-C₄₀-arylalkyl, or halo-C₁-C₁₀-alkoxy;

R² and R³ are each hydrogen, halogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, halo-C₁-C₁₀-alkyl, halo-C₆-C₁₅-aryl, C₇-C₄₀-arylalkyl, C₇-C₄₀-alkylaryl, C₁-C₁₀-alkoxy, halo-C₇-C₄₀-alkylaryl, halo-C₇-C₄₀-arylalkyl, or halo-C₁-C₁₀-alkoxy;

r is an integer from 1 to 3; and

s and t are integers from 0 to 2, where the sum r+s+t corresponds to the valence of M¹;

- (C) at least one organic compound comprising at least one functional group comprising active hydrogen, wherein the functional group is selected from the groups consisting of hydroxyl group, primary and secondary amino groups, mercapto groups, silanol groups, carboxyl groups, amido groups, and imido groups;
- (D) at least one Lewis base; and
- (E) at least one support."

Accordingly, Applicant kindly requests the Examiner to withdraw this rejection.

CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all objections and rejections

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and allow all pending claims 20-40. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Respectfully submitted,

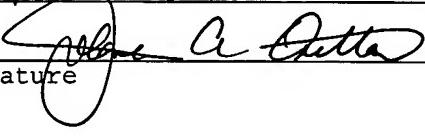
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